REMARKS

Applicant thanks the Examiner for the attention accorded the present Application in the January 29, 2007 Final Office Action, in which claims 1-29 were pending. By the foregoing amendments, claims 1, 10, 17 and 25 have been amended to more clearly specify the present invention. New claims 35-38 have also been added. No new matter has been added, and the amendments are fully supported throughout the specification, as more fully described below.

Claims 1-29 and 35-38 are now currently pending in this Application. Based on the above amendments, Applicant respectfully submits that the rejections to these claims have been overcome. Reconsideration of this Application, and allowance of claims 1-29 and 35-38, is respectfully requested in view of the foregoing amendments and the following remarks.

35 U.S.C. § 103(a) rejections

Claims 1-3, 5, 7, 10, 14, 15 and 25 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hasz in view of Rowe. Claims 25-29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Rafferty '169 in view of Rowe. Claims 4, 6, 8, 9 and 16 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hasz in view of Rowe, and further in view of Draghi. Claims 17-20 and 22-24 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hasz in view of Rowe and Draghi. Claims 11-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hasz in view Rowe and further in view of Chesnes. Claim 13 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hasz in view of Rowe and Chesnes and further in view of Rafferty '683. Claim 21 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hasz in view of Rowe and Draghi and further in view of Schaeffer. Applicant respectfully disagrees with the Examiner's conclusion and submits that the present invention is not obvious in view of, nor is it even suggested by, any of Hasz, Rowe, Rafferty '169, Draghi, Chesnes, Rafferty '683, and/or Schaeffer.

As presently claimed in Applicant's independent claims 1, 10, 17 and 25, Applicant's invention comprises methods of restoring dimensions to an article comprising "providing a rigid sintered preform having first and second layers made from different materials, **the first and second layers having mechanical properties similar to that of the article, the second layer comprising a low melting point component such that the second layer has a lower melting point than the first layer, the first layer having better oxidation resistance than the second layer**". The amendments to these claims are supported by Applicant's original specification at paragraphs [0025] and [0026].

In contrast, none of Hasz, Rowe, Rafferty '169, Draghi, Chesnes, Rafferty '683, or Schaeffer disclose, nor even suggest, utilizing a rigid sintered preform like Applicant's.

Hasz discloses using a metal foil to apply a wear coating to a substrate,[1] not using a rigid sintered preform to do anything.

Rafferty '169 discloses using a two layer tape to repair superalloys,[2] not using a rigid sintered preform to do anything.

Draghi discloses using multiple layers of a flexible tape to reclassify (i.e., dimensionally restore) airfoils,[3] not using a rigid sintered preform to do anything. Furthermore, Draghi never mentions sintering the tape to create a rigid sintered preform like Applicant claims.

Chesnes discloses a powdered composition that can be used to repair superalloy articles via diffusion brazing.[4] Chesnes never mentions sintering the powder to create a rigid sintered preform like Applicant claims.

Rafferty '683 discloses using a multiple layered "flexible and pliable" tape to repair parts having complex geometries.[5] Rafferty '683 never mentions sintering the tape to create a rigid sintered preform like Applicant claims.

Schaeffer discloses using a flexible tape to repair a damaged chromium coating,[6] not using a rigid sintered preform to do anything. The tape in Schaeffer is flexible

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1 *See* Hasz, col. 2, line 62 to col. 3, line 5; and Abstract, among other places.
2 *See* Rafferty '169, Title and Abstract; col.3, lines 9-12.
3 *See* Draghi, col. 2, lines 47-57.
4 *See* Chesnes, col. 12, lines 48-54, among other places.
5 *See* Rafferty, col. 2, lines 47-50.

enough so it is in contact with the substrate to which it is applied.[7] Furthermore, Schaeffer never mentions sintering the tape to create a rigid sintered preform like Applicant claims.

Rowe discloses a plate that can be used to restore the flow area on an airfoil,[8] but Rowe's plate is only a single layer plate. As the Examiner noted, Rowe teaches "a rigid sintered preform made of a two component system material."[9] However, Rowe never mentions using a multilayered preform like Applicant claims, only that the single layer plate of Rowe can be made of a two component system material. In Applicant's invention, the first layer is really a one component system comprising a first powder mixed with a binder, while the second layer is really a two component system comprising a first powder and a second powder mixed with a binder.[10] Rowe never mentions anything even remotely close to the rigid sintered preform like Applicant claims. Furthermore, as noted in paragraphs [0010] and [0011] of Applicant's specification:

> [0010] Another method for refurbishing gas turbine vanes is disclosed in U.S. Pat. No. 5,522,134 to Rowe et al. The method of restoration in Rowe et al. includes the steps of cutting a plate of pre-sintered material that is either cobalt or nickel-based and machining the plate so the plate includes the appropriate thicknesses throughout. Thereafter, any protective coatings are removed from the material and the airfoil to which the material will be added is degreased and cleaned. The plate is then positioned over the area of the airfoil that needs to be repaired or refurbished and the plate is welded to the airfoil by resistance tack welding.
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> [0011] The current industry practice is to use a single layer preform for restoring dimensions of an airfoil, wherein the single layer includes two intermixed or blended components, namely a base alloy and a low melt phase alloy. The airfoil and the preform are subjected to braze melt and diffusion heat cycles. **Due to certain alloying elements in the low melt phase alloy, the single layer preform has a lower oxidation resistance than preferred, thus possibly leading to premature removal of turbine engines or airfoils.**

As is clear from Applicant's specification, Applicant knew about Rowe and appreciated that the single plate of Rowe was not the best way to restore dimensions to an airfoil.

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6 *See* Schaeffer, col. 6, lines 22-34 and col. 4, lines 24-42, among other places.
7 *See* Schaeffer, col. 6, lines 22-34 and FIGS. 6-7.
8 *See* Rowe, Abstract.
9 *See* Rowe, col. 3, lines 45-51.
10 *See* Applicant's spec., paragraphs [0031] – [0033] and claims 35-38.

Therefore, Applicant came up with the present invention, which is in no way suggested by Rowe.

Therefore, none of Hasz, Rowe, Rafferty '169, Draghi, Chesnes, Rafferty '683, or Schaeffer disclose, nor even suggest, neither alone nor in combination, using a rigid sintered preform to restore dimensions to an article or airfoil, as recited in independent claims 1, 10, 17 and 25 of Applicant's invention.

Based on the above arguments and amendments, Applicant respectfully submits that independent claims 1, 10, 17 and 25 of the present invention are patentably distinguished from each of Hasz, Rowe, Rafferty '169, Draghi, Chesnes, Rafferty '683, and Schaeffer. As claims 2-9 and 35 depend from claim 1, claims 11-16 and 36 depend from claim 10, claims 18-24 and 37 depend from claim 17, and claims 26-29 and 38 depend from claim 25, the discussion above applies to these claims as well. Further, these claims each include separate novel features. Thus, Applicants respectfully request that the Examiner withdraw these rejections and allow pending claims 1-29, and new claims 35-38.

CONCLUSION

Applicant respectfully submits that the amendments and arguments presented above successfully traverse the rejections given by the Examiner in the Office Action. For the above reasons, it is respectfully submitted that the pending claims patentably distinguish the present invention from the cited references. Allowance of pending claims 1-29 and 35-38 is therefore respectfully requested.

As this response is being timely filed within three (3) months of the mailing date of the Final Office Action dated 01/29/07 (since 04/29/07 was a Sunday, this response is being timely filed on Monday 04/30/07), Applicant believes that the only fees due are **$790** for a Request for Continued Examination. Since five (5) claims (1 independent, 4 dependent) were previously withdrawn as being drawn to a non-elected invention, no fees are due to cover the addition of the four (4) newly added dependent claims. The Commissioner is authorized to charge this amount and any additional fees that may be due, or credit any overpayment, to **Deposit Account Number 21-0279, Order No. EH-10992.**

Should the Examiner have any questions, or determine that any further action is necessary to place this Application into better form for allowance, the Examiner is encouraged to telephone the undersigned representative at the number listed below.

Respectfully submitted,

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